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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gerald Adams

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EXAMINER

MAHYERA, TRISTAN J

ART UNIT

PAPER NUMBER

1615

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/506,374	Applicant(s) ADAMS ET AL.	
	Examiner TRISTAN J. MAHYERA	Art Unit 1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 07 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 2-15 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/20/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt of Amendment and Remarks, filed on 12/7/2007, is acknowledged. Claims 17-19 are newly added. Claims 1 and 9-15 are amended and claim 16 had been cancelled. Claims 1-15 and claims 17-19 are pending.

Response to Arguments

Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

The objection to claims 9-14 is hereby **withdrawn** in light of the amendment.

Claims 2-15 **remain** objected to because of the following informalities: These claims recite "**A** hair treatment composition..." however, dependent claims must be drawn to "**The** hair treatment composition..." in order to properly define the invention. Appropriate correction is required. New claims 17-19 are objected to for the same reasons as stated above.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The 35 USC § 112 2nd paragraph rejection of claim 16 is hereby **withdrawn** in light of the amendment.

Claims 2 and 17-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In Claim 2, the alkyl term in the amino"alkyl"methacrylate is not defined. The scope of "alkyl" is not shown and the only written description is for "ethyl" on page 17 lines 8 and 9 of the specification.

Claims 17 and 18 are rejected because the claims imply that the block copolymer is soluble in ethanol and water. The claims should have been written such that the hair treatment composition comprising the copolymer is soluble in "a solvent selected from" water, ethanol and mixtures thereof. See Markush language in claim 7.

Claim 19 is rejected because no written description exists for R being "substituted". The specification only defines "substituted" for R' and R", not for R.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 3 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 and 3 recites the limitation "poly(aminoalkyl methacrylate) blocks" in line 2 of claim 2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 19, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by NAGARAJAN et al. "Poly(ethylene glycol) block copolymers by redux process: kinetics, synthesis and characterization", Pure & Appl. Chem., Vol 70, No. 6, pp. 1245-1248, 1998.

NAGARAJAN teaches ABA block copolymers of PEG with MMA and MAA in aqueous medium. A specific block polymer synthesized is the Poly(methyl methacrylate)-b-Poly(ethylene glycol)-b-Poly(methyl methacrylate) See e.g. page 1248, DSC studies; instant claim 1. The synthesis of these polymers was carried out in an aqueous acidic medium and water is a cosmetically acceptable diluent or carrier. See e.g. see page 1246, Polymerisation line 1; instant claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAGARAJAN in view of PEI-HONG et al. "Synthesis and Characterizations of Poly[2-(dimethylamino)ethyl methacrylate]-Poly(propylene oxide)-Poly[2-(dimethylamino)ethyl methacrylate] ABA Triblock Copolymers", J. of Polymer Science: Part A: Polymer Chemistry, Vol 40, 624-631, 2000.

NAGARAJAN teaches ABA block copolymers of PEG with MMA and MAA in aqueous medium, as described above.

NAGARAJAN does not teach Poly[2-(dimethylamino)ethyl methacrylate] as the A group.

PEI-HONG teaches a method of synthesizing a well-defined ABA triblock copolymer. The triblock polymer has Poly[2-(dimethylamino)ethyl methacrylate] as the A group and Poly(propylene oxide) as the B group. See e.g. page 626, Figure 1; instant claims 1-3. Poly(propylene oxide) is the same compound as poly(propylene glycol) and differs from poly(ethylene glycol) by one carbon. While the B group is not PEG, the specification of the instant application discloses any poly(alkylene glycol) as

Art Unit: 1615

suitable for the hair care composition of the instant application. See e.g. page 6 lines 20-21 of the instant specification.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make a Poly[2-(dimethylamino)ethyl methacrylate]-Poly(ethylene oxide)-Poly[2-(dimethylamino)ethyl methacrylate] ABA triblock copolymers as taught by NAGARAJAN in view of PEI-HONG. One of ordinary skill in the art at the time the invention was made would have been motivated to combine these elements into a single composition because ABA polymers consisting of both hydrophilic and hydrophobic blocks are used widely in the biomedical, surface and biological sciences and poly(propylene glycol) and poly(ethylene glycol) are both hydrophilic and would have the same predictable art recognized function in a polymer with DMAEMA as the A group. Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention.

Claims 4-6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAGARAJAN in view of ADAMS et al (US 2002/0098214 see PTO-1449).

NAGARAJAN teaches ABA block copolymers of PEG with MMA and MAA in aqueous medium, as described above.

NAGARAJAN does not exemplify any divalent linkers.

ADAMS teaches polysiloxane block copolymers for use in cosmetic and hair styling compositions where the A and B group in a diblock AB or ABA triblock copolymer

Art Unit: 1615

are connected by a linker. The linkers are "-R-C(O)-O-", "-R-O-(O)-O-", "-R-C(O)-N(R')-", "-R-O-C(O)-N(R')-", or "-R-N(R')-C(O)-N(R'')-" in which R is a divalent, optionally substituted, linear or branched C1-C18 hydrocarbon radical and in which R' and R'' are independently selected from monovalent, optionally substituted, linear or branched C1-C18 hydrocarbon radicals. See e.g. claim 4 and p[0058]-p[0066]: instant claims 4-6 and 19. ADAM specifically teaches A-L-B-L-A triblock copolymers used with the divalent linkers. See e.g. p[0066].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make a hair treatment composition comprising the MMA-b-PEG-b-MMA block polymer where MMA and PEG are linked with a divalent linker, as taught by NAGARJAN in view of ADAMS. One of ordinary skill in the art at the time the invention was made would have been motivated to combine these elements into a single composition because the divalent linkers are used specifically in the hair care art ABA triblock copolymers, as taught by ADMAS. Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention.

Claims 7-15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAGARAJAN in view of FRECHET et al. (US 2002/0160026 see PTO-892 filed 10/12/2007).

NAGARAJAN teaches ABA block copolymers of PEG with MMA and MAA in aqueous medium, as described above.

FRECHET teaches a cosmetic composition comprising a thermoplastic elastomer having a backbone comprising at least a proportion of C-C bonds and two or more flanking polymers. See paragraph [0014]. The resulting copolymer can be an ABA block copolymer, see paragraph [0022]; instant claim 1. The cosmetic composition can be used for hair treatment, specifically hair styling, and comprise a cosmetically acceptable diluent or carrier and may contain a fragrance or perfume, see Abstract and paragraph [0080]; instant claims 1 and 8. The flanking and core polymers of the ABA copolymer are typically selected in a manner so as to produce a block copolymer with balanced hydrophilic/hydrophobic character. The copolymer may be, for example, soluble in water, ethanol or mixtures thereof or soluble in other cosmetically acceptable diluents or carriers. See paragraph [0028]; instant claim 7. The level of solubility is preferably from about 1% to about 25% by weight at 25C. See e.g. p[0029]; instant claims 17 and 18. The A group can be made of numerous compounds, preferably based on the monomer of dimethylaminoethyl methacrylate, see paragraph [0058] line 8; instant claim 1-3. Compositions of FRECHET contain the polymer in an amount ranging from 0.01% to 30%, more preferably from 0.1 to 10%, even more preferably from 0.1 to 5% by weight. See paragraph [0080]; instant claim 10. FRECHET also teaches the use of any conventional propellant to deliver the material as foam or as a fine, uniform spray. See paragraph [0086]; instant claim 13. The level of propellant can be adjusted as desired but is generally from about 3% to about 30% by weight based on

Art Unit: 1615

total weight for mousse compositions and from about 15% to about 50% by weight based on total weight for aerosol hair spray compositions. See paragraph [0086]; instant claim 9. Additionally a surfactant can be present at a level of from about 0.01% to about 7.5% by weight based on total weight of the composition. See paragraph [0086]; instant claim 12. The use of a structurant or thickener is taught and can be added an amount of from 0.01% to 10% by weight. See paragraph [0088]; instant claim 14. A cosmetic method of treating hair by applying the composition is disclosed in claims 29-31; instant claim 15.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make a hair styling composition comprising ABA block copolymers, a surfactant, propellant and fragrances or perfumes, as taught by NAGARAJAN in view of FRECHET. One of ordinary skill in the art at the time the invention was made would have been motivated to combine these elements into a single composition because the propellants, surfactants and fragrances or perfumes are known to improve a hair styling composition containing ABA triblock polymers, as taught by FRECHET. Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tristan J. Mahyera whose telephone number is 571-

Art Unit: 1615

270-1562. The examiner can normally be reached on Monday through Thursday 9am-4pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin H. Marschel can be reached on 571-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tristan J Mahyera/

Examiner, Art Unit 1615

/Michael P Woodward/

Supervisory Patent Examiner, Art
Unit 1615